DOCUMENT RESUME

ED 328 783 CE 056 999

AUTHOR Stone, Charles F.; Sawhill, Isabel V.
TITLE Labor Market Implications of the Growing Internationalization of the U.S. Economy. Research Report Series RR-86-20.
INSTITUTION National Commission for Employment Policy (DOL), Washington, D.C.
PUB DATE Jun 86
NOTE 60p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Adult Education; Adults; Career Change; *Dislocated Workers; Economic Change; *Employment Opportunities; *Employment Patterns; Employment Programs; Employment Projections; Federal Programs; Futures (of Society); *International Trade; Job Layoff; Job Training; Labor Economics; *Labor Market; Labor Needs; Labor Turnover; *Occupational Mobility; Public Policy; Relocation
IDENTIFIERS Job Training Partnership Act 1982

ABSTRACT

A study analyzed how trade has affected and was likely to affect the economy along three dimensions: (1) the employment shifts occurring during the years 1972-1984; (2) the outlook for employment projected to 1990 under four different scenarios; and (3) issues related to displaced workers. Increased international trade was found to have been associated with shifts in the occupational, industrial, and geographic distribution of jobs in the U.S. economy, but not with any significant change in total employment. Total employment was largely determined by macroeconomic monetary and fiscal policies. Projections of employment growth to 1990 under four different macroeconomic scenarios showed that an improvement in underlying macroeconomic conditions could restore more balanced job creation across industries. If the federal budget deficit and the trade deficit were not reduced, the decline in manufacturing and agriculture relative to services would continue to be aggravated, even with strong economic growth. As for the program in place for treating dislocated workers, Title III of the Job Training Partnership Act reached only about a fifth of those who seemed to need it. Findings indicated that effective adjustment programs were needed to distribute the burden of change more fairly. (An executive summary and 24 references are provided.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED328783

Labor Market Implications of the Growing Internationalization of the U.S. Economy

by

Charles F. Stone
and
Isabel V. Sawhill

June 1986 RR-86-20

RESEARCH REPORT SERIES
NATIONAL COMMISSION
FOR EMPLOYMENT POLICY
1522 K STREET, N.W.
WASHINGTON, D.C. 20005

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

CE 050 999

The conclusions and recommendations in this report are those of the contractor and do not necessarily reflect the views of the National Commission for Employment Policy or any other agency of the Federal Government.

TABLE OF CONTENTS

Page

Preface....iv

Executive Summary....v

I. Introduction....1

II. The Impact of Trade on Employment: A Conceptual Framework....5

Trade and Aggregate Employment....5
The Impact of Trade on Employment Patterns....5
Trade and Long Run Structural Change....6
Short Run Adjustment Costs....7
Long Run Structural Change versus Short Run Policy Shocks....8
Summary....9

III. The Impact of Trade on Output and Employment....10

Estimation Methods....10
Impact on Aggregate Employment....10
Impact on Specific Industries....13
"Constant Trade" Estimates of Changes in Employment due to Trade....15
Summary....17

IV. Effect on Occupations, Demographic Groups, and Regions....20

Estimation Methods....20
Occupations....20
Demographic Groups....22
Regions....22
Summary....22

V. Projections to 1990....25

Four Macroeconomic Scenarios....25
Results....25

VI. The Number and Characteristics of Dislocated Workers....30

VII Programs for Dislocated Workers.....35

A Note on Methodology.....35
The Manpower Development and Training Act.....35
Trade Adjustment Assistance (TAA).....36
Comprehensive Employment and Training Act (CETA).....37
Demonstration Programs.....37
Job Training Partnership Act.....39
Summary: What Have We Learned?.....41
Unresolved Issues.....42

VIII Conclusions and Policy Recommendations.....44

Bibliography.....45

Tables

1 Employment Attributable to Trade and Domestic Spending (1972-84).....2
2 The Impact of Trade on Employment Growth.....14
3 Employment Changes in Industries with Declining Employment and Negative Trade Effects.....16
4 Actual Changes in Employment Compared with Constant Trade Changes in Employment, 1972-1979.....18
5 Actual Changes in Employment Compared with Constant Trade Changes in Employment, 1979-1984.....19
6 Impact of Trade on Changes in Employment, by Occupation.....21
7 Impact of Trade on Changes in Employment by Demographic Group and Region.....23
8 Macroeconomic Assumptions.....26
9 Employment Growth by Industry, 1984-1990.....23
10 Employment Growth by Occupation, Demographic Group, and Region, 1984-1990.....29
11 Estimate of the Number of Displaced Workers based on Different Assumptions.....31
12 Distributions of Title III JTPA Enrollees and Eligible Population of Displaced Workers by Selected Characteristics.....34
13 Program Statistics on Title III Enrollees and Terminees, July 1984-March 1985.....40

Figures

1 Exchange Rates and Net Exports.....3
2 The Impact of Trade on Employment.....11
3 Changes in Employment, 1972-1984.....12

Appendix A Methodology.....A-1

Appendix B Detailed Results by Industry.....B-1

PREFACE

In April 1984, the National Commission for Employment Policy initiated a multi-year investigation of "Changes in the Workplace." The present report is on the second change in the American economy being analyzed under this workplan, the increasing internationalization of the U.S. economy and what this means for U.S. labor markets. The first change studied was the impact of computers in the workplace: a volume containing the Commission's policy statement and staff report was published in March 1986.

The authors of this report, Drs. Charles Stone and Isabel Sawhill, have analyzed how trade has affected and is likely to affect the economy along three dimensions: the employment shifts occurring during the years 1972-1984; the outlook for employment to 1990 under four different scenarios; and issues related to displaced workers. The authors draw policy-relevant conclusions from their research that will be helpful to the Commission in formulating recommendations to the President and Congress.

The report indicates that increased international trade has been associated with shifts in the occupational, industrial and geographic distribution of jobs in the U.S. economy, but not with any significant change in total employment. Total employment is largely determined by macroeconomic monetary and fiscal policies. Stone and Sawhill point to the importance for total employment of macroeconomic policies consistent with strong economic growth over the remainder of the decade; focusing policy attention on reducing the trade deficit alone will alter the balance of employment across industries, but not produce significant net job growth.

Workers and firms adversely affected by trade are concentrated in particular regions and industries. Their resistance to loss of markets and jobs to foreign competition can make realization of the gains to the nation from trade more difficult. The report concludes that effective adjustment programs are needed to distribute the burden of change more fairly.

The project on employment effects of increasing internationalization was designed by three members of the Commission staff: Stephen Baldwin, team leader; Carol Romero and Sara Toye, under the general supervision of a Commission work group chaired by Commissioner D. Quinn Mills. This team has overseen the efforts of the contractors on this project. The Commission expresses its appreciation to Drs. Stone and Sawhill for their thoughtful work. However, the findings and conclusions of this study are those of the researchers alone, and should not be construed as representing the views of either the Commission or its staff.

NOTE: A technical appendix, summarizing the study methodology and containing detailed tables, is available on request from the Commission at 1522 K Street N. W. Suite 300, Washington, D.C. 20005.

EXECUTIVE SUMMARY

LABOR MARKET IMPLICATIONS OF THE GROWING INTERNATIONALIZATION OF THE AMERICAN ECONOMY

by

Charles F. Stone and Isabel V. Sawhill[1]

Once largely insulated from the rest of the world, the U. S. economy has become increasingly internationalized in recent years. This has raised fears in some quarters that international trade is costing Americans jobs and threatening living standards in this country, but the labor market implications of the growing internationalization of the American economy are more subtle than these fears suggest.

Rather than costing the American economy jobs, international trade has changed where jobs are being created and where they are being lost. Furthermore, the average American has benefitted from the lower prices and greater choice among goods afforded by expanding trade. Finally, the labor market problems of workers facing international competition have been aggravated by short run exchange rate movements that are already beginning to be reversed.

Nevertheless, some workers, firms, and communities face difficult adjustment problems arising from the growing internationalization of the American economy. Unless these costs are identified and proper policy responses developed, adversely-affected groups are likely to resist change and the potential gains from trade are unlikely to be realized fully, even though they may in the aggregate be much larger than the costs to those facing adjustment.

The Impact of Trade on Employment, 1972-1984

Many people believe that the United States first began to show signs of a serious deterioration in international competitiveness in the 1970s. In fact, the United States ran trade surpluses during most of the 1970s and more jobs were created by exports than were lost to imports. In 1972 exports created 3.6 million jobs (4.4 percent of all jobs in the economy) while imports replaced 3.5 million jobs. By 1979 exports created 6.6 million jobs (6.7 percent of all jobs) while imports replaced only 5.6 million jobs. Moreover, among industries suffering declining employment during the 1970s, factors other than trade were responsible in all but a few cases.

Things changed dramatically in the 1980s. The pursuit of a macroeconomic policy combining large federal budget deficits with monetary restraint produced high interest rates, a sharply appreciating dollar, and a large trade deficit. The net impact of trade on employment turned negative as well. The number of jobs attributable to exports fell slightly between 1979 and 1984 while the number of jobs replaced by imports surged. The balance between the number of

---

1 Senior Research Associate and Co-Director, respectively, Changing Domestic Priorities Project, the Urban Institute, 2100 M St., N.W., Washington, DC 20037. Opinions expressed are those of the authors and do not necessarily represent the view of the Urban Institute or its sponsors.

jobs created by exports and the number of jobs replaced by imports, which showed a surplus of nearly a million in 1979, showed a deficit of more than a million in 1984, and trade became an important factor contributing to employment losses across a much wider range of industries than in the 1970s.

Nevertheless, 6.2 million new jobs were generated throughout the economy between 1979 and 1984 and it is unlikely that many more would have been generated if trade had been more balanced. Rather, the Federal Reserve might have exercised even greater restraint between 1979 and 1984 if it had not been for the effect of the strong dollar and import competition in keeping inflation down.

The Impact of Trade on Specific Industries and Groups

Although changing trade patterns probably had little effect on the total number of jobs generated in the economy between 1972 and 1984, they did affect where jobs were generated. Without the fall in the exchange rate and increase in the trade surplus that took place between 1972 and 1979 there would have been 371,000 fewer jobs in agriculture in 1979, 221,000 fewer jobs in manufacturing, and 592,000 more jobs in the rest of the economy, most of them in services. Without the rise in the exchange rate and the trade deficit between 1979 and 1984, there would have been 116,000 more jobs in agriculture in 1984, 1.7 million more jobs in manufacturing, and 1.8 million fewer jobs in the rest of the economy, with most of the reduction occurring in services. Thus, trade slowed any long run trend toward greater growth in the service sectors between 1972 and 1979 but accelerated that trend between 1979 and 1984.

The list of declining industries in which trade was an important contributing factor was quite short for the 1972-1979 period, comprising only apparel and leather products. It was much longer for the 1979-1984 period. In some industries, including steel, food products, and many machinery industries, trade was important, but other factors contributed as well. In other industries, including automobiles and textiles and apparel, the decline could be attributed entirely to trade since the contribution of all other factors was positive. Even in the 1979-1984 period, some industries, most notably electronic equipment and accessories, showed strong employment gains despite heavy losses due to trade.

The impact of changing trade patterns on occupations and demographic groups accords with our common sense view of what has happened in recent years. By stimulating employment in services and discouraging it in farming and manufacturing, trade has stimulated white collar and service employment at the expense of blue collar and rural employment. Furthermore, the kinds of jobs and industries whose employment has been stimulated typically employ a higher proportion of women and younger workers than the industries in which job growth has been discouraged. The only somewhat surprising result is that nonwhites have not shared in the gains achieved by women and teenagers. In general, however, the net impact of trade on any group has been quite small (typically less than 1 percent of that group's total employment).

Projections to 1990

Projections of employment growth to 1990 under four different macroeconomic scenarios show that an improvement in underlying macroeconomic conditions can restore more balanced job creation across industries. However, if the federal

budget deficit and the trade deficit are not reduced, the decline in manufacturing and agriculture relative to services will continue to be aggravated, even with strong economic growth. For example, 60,000 more jobs are created in agriculture and 416,000 more jobs are created in manufacturing in a scenario combining strong growth with a reduced trade deficit than are created in a scenario combining equally strong overall employment growth with a continuing large trade deficit.

Thus, reducing the trade deficit is important for restoring more balanced job creation across industries. However, it is even more important for job creation in almost all industries to achieve high employment than it is to improve the trade balance. In manufacturing, for example, 256,000 more jobs are created in a scenario combining strong growth with a continuing large trade deficit than in a scenario combining weaker growth with a smaller trade deficit. Obviously, it is better still to combine strong growth with a smaller trade deficit.

Policies to Aid Dislocated Workers

The focus of this study is on identifying the kinds of workers who are likely to face economic dislocation due to international trade. However, the problems faced by these workers are not fundamentally different from the problems faced by workers dislocated by other kinds of economic change. We estimate that perhaps 5 percent of all workers who suffer some unemployment could be considered dislocated and in need of special assistance. The program now in place for treating such dislocated workers, Title III of the Job Training Partnership Act (JTPA), reaches only about a fifth of those who seem to need it.

JTPA is the latest in a series of programs aimed at assisting displaced workers. Some of these programs have focused specifically on trade-related job losses but not all have.

The Manpower Development and Training Act (MDTA), which operated from 1962 to 1973, was originally designed to address the problems of structural unemployment among adult workers, but it evolved into a program in which two-thirds of the training positions went to youth and disadvantaged workers. The large literature evaluating this program suggests that training was effective in allowing participants to compete more effectively for existing jobs and to achieve more stable employment, though not generally higher hourly wages or more highly-skilled positions than they had before the training. Nor is there good evidence on whether the earnings gains initially afforded program participants (about $1300 per year in 1984 dollars) were maintained long enough for the program to be judged cost-effective.

Trade Adjustment Assistance (TAA), which began in 1962, was designed to provide assistance specifically to those losing jobs due to imports. The program is now widely conceded to have been a failure. Few people were served initially and a large number of those who were served ended up returning to their old employers, suggesting that the program was serving those facing temporary layoffs rather than those facing true dislocation.

This experience with TAA calls into question the strategy of focusing on the cause of job loss rather than the consequence of job loss in designing a program. Adjustment assistance programs are needed for those who face a permanent job loss and difficulty finding a new job, regardless of the cause of

the job loss. Workers facing temporary earnings losses caused by import competition do not in principle have a greater claim on assistance than those facing temporary earnings losses for other reasons who are eligible only for unemployment compensation.

The Comprehensive Employment and Training Act (CETA), which replaced MDTA in 1973, was the nation's major employment and training program until it expired in 1982 but it never served many dislocated workers. The current program is Title III of JTPA, but it is too early to know how effective it has been in assisting dislocated workers.

In an attempt to learn more about the best way to assist dislocated workers, the Department of Labor funded seven pilot projects in the 1980s and initial evaluations of their impacts are available for two of these projects. Both provided evidence that job search and placement assistance were successful in increasing participants' probability of being employed and in raising their earnings. Evidence of the benefits and cost-effectiveness of training was somewhat weaker.

Clearly, the United States has not had a systematic program to assist dislocated workers. Nor is it easy to draw lessons from the disparate set of programs that have in one way or another met some of the needs of some dislocated workers. The provision of cash assistance does not seem to promote adjustment, but, if properly targeted, does seem to compensate workers for the lower earnings they must frequently accept as the cost of adjustment. Programs offering a full range of training and job-search assistance do seem to be successful, at least in the short run, for highly-motivated workers in relatively strong local labor markets. Job search assistance seems to be more cost-effective than training, and basic education seems to be as necessary as vocational training. However, the design of effective programs remains hindered by a lack of knowledge in areas as basic as identifying who are dislocated workers and evaluating the extent to which assistance programs actually lower the number of unemployed workers rather than simply giving program participants an advantage over non-participants in the competition for jobs.

Conclusions and Policy Recommendations

This study of the labor market implications of the growing internationalization of the American economy has provided evidence that international trade developments indeed have had an adverse impact on employment in many industries in recent years. However, these impacts seem to have been caused much more by short run changes in the exchange rate arising from the particular mix of monetary and fiscal policy that has been pursued over the past few years than by a fundamental deterioration of U. S. competitiveness in world markets. Moreover, trade has had much more of an effect on where new jobs have been created--in service and other non-trade-sensitive industries and not in manufacturing and agriculture--than on the total number of jobs created. Nevertheless, U. S. labor markets do face adjustments arising from the increasing internationalization of the economy and some workers will lose their jobs and have little prospect of getting the same jobs back or of remaining in the same industries.

The problems of those facing temporary unemployment due to the overvalued dollar and large trade deficit are best addressed by getting our macroeconomic house in order. Continued progress in reducing the federal budget deficit

together with a somewhat more stimulative monetary policy can bring down interest rates and the exchange rate and achieve more balanced growth. As long as oil prices remain weak, the risk of inflation associated with a falling dollar and expanding economy remains relatively small.

The problems of those facing longer run structural adjustments are not likely to be solved by macroeconomic policy alone, although it is true that it will be easier for those losing jobs in shrinking industries to find new jobs if the overall labor market is strong rather than weak. Our experience with past programs to aid dislocated workers suggests that carefully targeted adjustment assistance programs can improve the re-employment prospects of dislocated workers. Job search and placement assistance appear to be more cost-effective than training.

Finally, it is important to recognize the futility of pursuing protectionist policies. Import restraints may protect some jobs in some industries in the short run but they cost jobs in other industries at the same time and they prevent the kinds of long term adjustments that are necessary for healthy long run growth. Well-designed adjustment assistance programs stand a better chance of helping those hurt by trade while at the same time facilitating appropriate adjustments to changing economic conditions.

LABOR MARKET IMPLICATIONS OF THE GROWING INTERNATIONALIZATION OF THE AMERICAN ECONOMY

I. Introduction

Many people believe that the United States first began to show signs of a serious deterioration in international competitiveness in the 1970s. In fact, the United States ran trade surpluses during most of the 1970s, and, according to estimates of the net impact of trade on employment developed in this study, more jobs were created by exports than were replaced by imports (Table 1).[1] Moreover, among industries suffering declining employment during the 1970s factors other than trade were responsible in all but a few cases representing only a small fraction of total employment.

Things changed dramatically in the 1980s. Net exports peaked in 1981, and a large and growing trade deficit had emerged by 1984. The net impact of trade on employment turned negative as well, according to our estimates. Whereas jobs created by exports exceeded jobs replaced by imports by nearly 1 million in 1979, jobs created by exports fell short of jobs replaced by imports by more than a million in 1984; and trade became an important factor contributing to employment losses across a much wider range of industries than in the 1970s.

What caused this reversal? The most important factor is almost surely the sharp appreciation of the dollar after 1980. Figure 1 shows that the behavior of the exchange rate and the behavior of net exports are almost mirror images of one another between 1972 and 1984. This correlation is borne out in more careful studies of the causes of the trade deficit.[2] Most of the deficit is explained by the strength of the dollar. Unfair trade practices among our trading partners, the loss of markets in less developed countries due to their debt crisis, and slower growth among our trading partners are of lesser significance quantitatively and have been offset for the most part by declining oil imports.

Our concern in this study is not with the causes of the strong dollar and the trade deficit, but with their effects on employment, both at the aggregate

---

1 Exports "create" jobs in the sense that they generate output and employment over and above what would be required to meet domestic demand with domestic production. Imports "replace" jobs in the sense that they reduce the domestic output and employment needed to meet domestic demand. However, the number of jobs required to meet domestic demand with domestic production is a hypothetical concept, and most of the jobs classified as "replaced by imports" never existed in the first place. Thus, the slightly misleading phrase "jobs replaced by imports" is shorthand for the more cumbersome phrase "jobs lost to imports and jobs that were never created because imports substituted for domestic production."

2 See, for example, Congressional Budget Office, The Economic and Budget Outlook, August 1985, pp. 46-51.

TABLE 1

Employment Attributable to Trade and Domestic Spending 1972-1984
(millions of jobs)

	Total[1]	Exports[2]	Imports[3]	Net Exports	Domestic Spending[4]
Levels:					
1972	82.2	3.6	-3.5	0.1	82.1
1979	98.8	6.6	-5.6	1.0	97.8
1984	105.0	6.5	-7.5	-1.0	106.0
Changes:					
1972-1979	16.7	3.0	-2.1	0.9	15.8
1979-1984	6.2	0.1	-1.9	-2.0	8.2

SOURCE: Authors' calculations. See Appendix A.

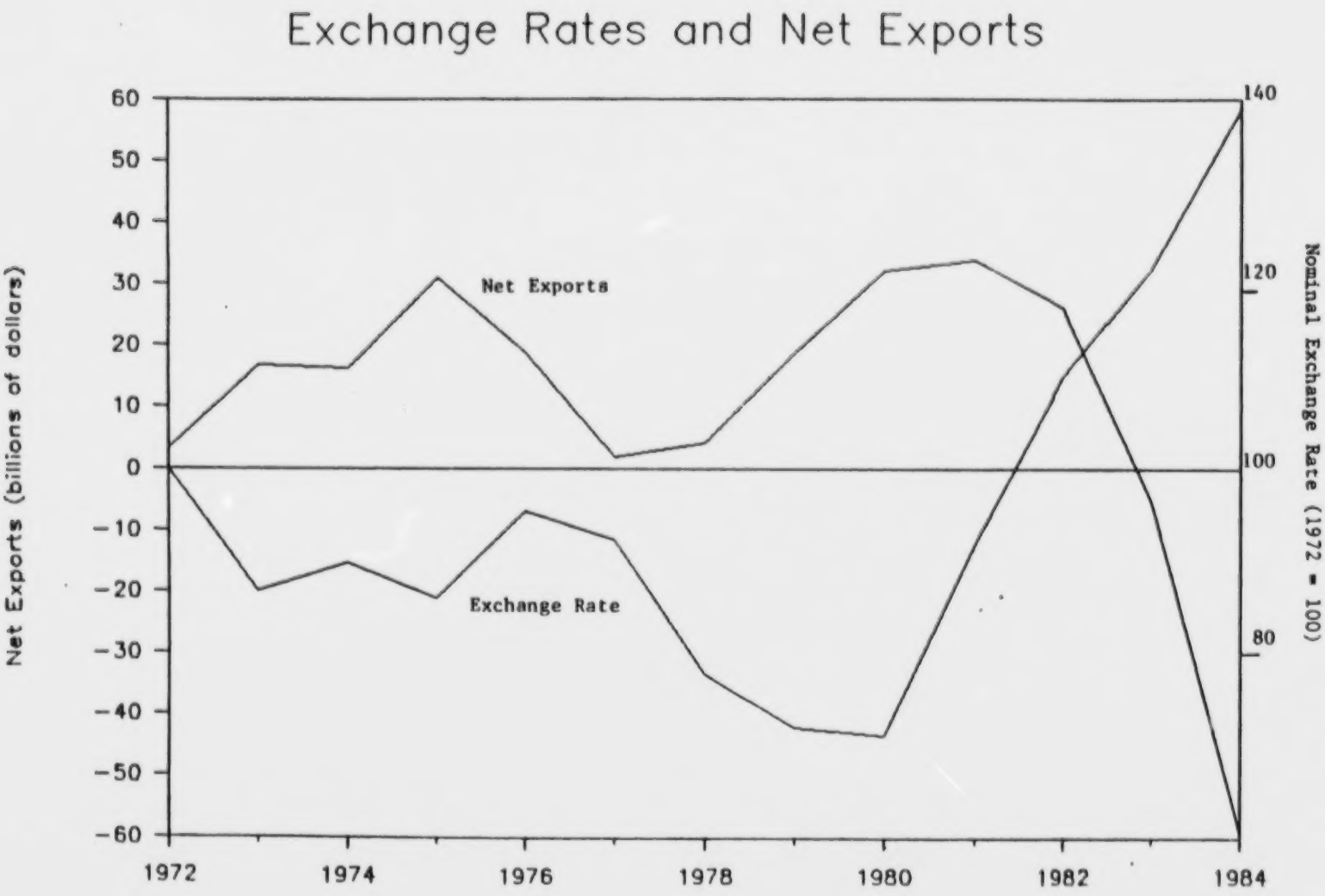
1. Civilian employment.

2. Employment required to produce exports.

3. Employment required to replace imports with domestic production.

4. Employment required to satisfy domestic demand for consumption, investment, and government purchases with domestic production.

FIGURE 1


Exchange Rates and Net Exports
Net Exports (billions of dollars)
Nominal Exchange Rate (1972 = 100)
Net Exports
Exchange Rate
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
140
120
100
80
1972
1974
1976
1978
1980
1982
1984

level and on an industry-by-industry basis. After presenting a brief conceptual framework for evaluating the impact of trade on employment, we present estimates of how trade has affected employment in different industries, occupations, demographic groups, and regions between 1972 and 1984. We also provide projections of how employment will be affected between now and 1990 under four different macroeconomic scenarios.

One reason for trying to get a better understanding of the impact of trade on workers in different industries, occupations, demographic groups, and regions is to be able to design appropriate public policies for assisting those who are dislocated by changing trade patterns. However, appropriate policies for dislocated workers should probably not be limited to those dislocated by trade. Therefore, in the second half of this study we examine the problems of dislocated workers generally and we evaluate past programs aimed at assisting those who have been dislocated by trade or other economic changes.

II. The Impact of Trade on Employment: A Conceptual Framework

Trade and Aggregate Employment

A problem faced by anyone trying to understand the impact of growing trade on U. S. labor markets is to separate effects due to trade from effects that would have taken place even in an economy less open to trade. A common error is to infer from estimates of the number of jobs lost to trade that the total number of jobs in the economy would be that much higher in the absence of trade. In fact, the total number of jobs generated in the economy depends much more on the level of aggregate demand set by monetary and fiscal policy than on the particular components of that demand. Careful studies of the impact of trade on employment have found little net impact at the macroeconomic level: jobs lost to imports tend to be offset by jobs gained elsewhere in the economy, usually as a result of expanding exports.[3]

Even recently in the United States, despite a rising dollar and a widening trade deficit, jobs lost in industries affected by trade are being made up elsewhere and employment has continued to grow. Although we estimate that changing trade patterns resulted in a loss of about 2 million jobs between 1979 and 1984, changing patterns of domestic demand resulted in a gain of more than 8 million jobs. Overall, the economy gained 6 million new jobs despite serious adverse trade effects. Moreover, it is unlikely that job growth would have been substantially greater even with favorable trade effects. For more jobs to have been generated, the Federal Reserve would have had to be willing to allow the money supply to grow more rapidly, but without the help against inflation afforded by a strong dollar and import competition, it is unlikely the Fed would have been willing to be more expansionary.

The Impact of Trade on Employment Patterns

Although changing patterns of international trade are unlikely to have a major impact on the total number of jobs generated in the economy, they do have an effect on where the jobs are generated. Industries in which the United States is a relatively low cost producer will expand when exports grow while industries in which the United States is a relatively high cost producer will shrink in the face of growing import competition. Workers with the particular skills required in the expanding export industries or living in areas with a relatively high concentration of export industries will enjoy expanding job opportunities while workers with the particular skills employed in import-competing industries or living in regions with a relatively high concentration of import-competing industries will suffer diminished job opportunities.

In a textbook economy, wages will begin to rise in expanding industries and regions and they will begin to fall in contracting industries and regions. This

---

3 See, for example, Robert Z. Lawrence, "Is Trade De-Industrializing America?" Brookings Papers on Economic Activity 1, 1983, pp. 129-171; and Robert E. Baldwin, John H. Mutti, and J. David Richardson, "Welfare Effects on the United States of a Significant Multilateral Tariff Reduction," Journal of International Economics 10 (1980), pp. 405-423.

will encourage workers to move from contracting industries to expanding industries and encourage firms to move into lower wage regions while eschewing higher wage regions. In this way, resources will be allocated to their most efficient use, high employment will be maintained, and national income will be as large as possible. In the real world, of course, workers in contracting sectors may be unable to find or unwilling to accept new jobs in expanding sectors. Firms in expanding industries may not move readily into areas that have lost jobs. Workers hired in expanding industries may not be the same people who have lost jobs in contracting industries.

Advocates of free trade properly stress the long term gains to the economy from adjusting to changing patterns of international competitiveness. The average consumer benefits from the lower prices and greater variety of products available for consumption in an economy that is becoming increasingly open to trade and living standards rise. However, the labor market adjustments associated with this openness may be costly. Moreover, the gains from trade are broadly shared but the costs tend to be borne by specific industries, regions, and classes of workers. Unless these costs are identified and proper policy responses developed, adversely affected groups are likely to resist change and the potential gains from trade are unlikely to be realized fully, even though they are in the aggregate much larger than the costs.

Trade and Long Run Structural Change

Conventional economic models of the impact of trade on employment and earnings take a long run view that abstracts from these short run adjustment problems. In these models, trade encourages the production of those goods and services that make relatively intensive use of a country's abundant factors of production (which might be labor, capital, or natural resources) and encourages the importing of those goods and services which, when produced domestically, make relatively intensive use of the country's scarce factors of production. Trade raises the earnings and employment opportunities of the country's abundant factors and lowers the earnings and employment opportunities of its scarce factors.

Although the United States might seem to be the world's most capital-rich country, evaluations of the factor content of U. S. imports and U. S. exports have revealed a fairly persistent and paradoxical result, namely that the United States tends to import goods that use capital relatively intensively and to export goods that use labor relatively intensively.[4] Taken at face value, these results imply that increasing openness should raise the demand for labor relative to capital and hence raise wages and employment.

In the course of trying to understand this paradoxical result, however, economists have come to emphasize the importance of distinguishing among different kinds of labor rather than treating labor as a homogeneous input. The United States, having a relative abundance of skilled labor and a relative scarcity of unskilled labor compared to the rest of the world, has been found to

---

4 The classic work is Wassily Leontief, "Domestic Production and Foreign Trade: The American Capital Position Re-examined," in Richard Caves and Harry Johnson, eds., Readings in International Economics; Homewood: Irwin; 1968. See also, Robert E. Baldwin, "Determinants of the Commodity Structure of U. S. Trade," American Economic Review, no. 1, 1971.

export goods produced with relatively skilled labor and to import goods produced with relatively unskilled labor. Thus, increasing openness should lead to increased demand for skilled labor and reduced demand for unskilled labor. Earnings of the former will rise while earnings of the latter will fall.

Short Run Adjustment Costs

Although conventional models of the impact of trade on employment and earnings may properly emphasize the direction of long run adjustments associated with changing trade patterns, they say little about how quickly workers will adjust to these changes. Some workers may move easily among jobs, but others with investments in specific skills, union wage premiums, community or family ties, or a lack of knowledge of alternatives will not move so readily, especially if the only prospects they face entail lower earnings than they have enjoyed in the past.

If enough workers in industries that are contracting under the pressure of imports are unable to find, or unwilling to accept, new jobs, there may be an increase in structural unemployment that is not susceptible to a macroeconomic policy cure except at the cost of higher inflation. This will be so if workers in contracting sectors do not move to where new jobs are being created but a shortage of workers in expanding sectors puts upward pressure on wages there. Of course, there may simply be an offsetting reduction in structural unemployment in expanding sectors, in which case some workers' job prospects will get worse, but other workers' job prospects will improve. Nevertheless, the possibility of an increase in structural unemployment due to changing trade patterns and worker dislocation is an important qualification to our earlier conclusion that trade has a negligible impact on aggregate employment.

Quite apart from its possible impact on long run structural unemployment, increasing openness can complicate macroeconomic stabilization policy and increase unemployment in the short run. When an increasing amount of U. S. output goes to satisfying export demand and an increasing amount of U. S. consumption is satisfied by imports, the trade balance, and hence the pattern of labor demand, becomes increasingly sensitive to world economic conditions and the foreign exchange value of the dollar. When the rest of the world's economic recovery lags behind that of the United States, for example, U. S. producers find it difficult to sell abroad while foreign producers look to the U. S. market to maintain sales in the face of a weak home market. Similarly, with increasingly open international capital markets, volatile capital movements can cause exchange rate movements that hurt U. S. competitiveness in the short run.

These cyclical effects, which have little to do with long run competitiveness, may nevertheless add to the dispersion of unemployment across industries. Much like the structural unemployment arising from changing patterns of long-term competitiveness, this rise in the dispersion of unemployment across industries may increase the aggregate unemployment rate at which inflation is stable, leading policy makers to accept a higher level of unemployment than they would if the economy were less sensitive to foreign trade.

Thus, some of the changes in U. S. labor markets due to the growing internationalization of the American economy reflect longer run, structural changes in the pattern of U. S. competitiveness in world markets, while others reflect shorter run, cyclical changes in macroeconomic policy and the exchange

rate. Workers losing their jobs due to long term structural change face different problems and different re-employment prospects from workers experiencing cyclical unemployment. It is therefore worth distinguishing carefully between these two different kinds of labor market effects due to trade.

Long Run Structural Change versus Short Run Policy Shocks

Over fairly long periods of time, exports and imports tend to move together in response to changing patterns of international competitiveness. For example, if the United States begins to suffer from import competition in certain industries, say standardized manufactured goods that can be produced more cheaply in newly-industrializing countries, it may experience a temporary trade deficit due to rising imports of such goods. However, such a trade deficit tends to be self-correcting. Unless the rest of the world is willing to build up its financial claims against the United States forever, the demand for dollars will fall and the dollar will depreciate. This depreciation will make U. S. exports more competitive, stimulating output and employment in the export sector.

Similarly, if the U. S. should begin to experience difficulty competing in export markets, it will also experience difficulty acquiring the foreign exchange necessary to buy imports. This too will cause the currency to depreciate, making imports more expensive and increasing the share of output in import-competing sectors supplied by domestic producers. Thus, incipient trade imbalances brought on by changing patterns of long-term international competitiveness tend to bring on self-correcting exchange rate movements that keep the volume of exports and the volume of imports roughly in balance. The adjustment of output and employment in different industries and regions to changing conditions of long-term international competitiveness represents an efficient response to these changes. Policies designed to cushion the shock of adjustment for those bearing the greatest costs must be careful not to interfere unduly with the adjustment process itself.

Changes in the exchange rate arising from the pursuit of divergent and uncoordinated macroeconomic policies by the United States and its trading partners have a quite different effect from those arising from long term changes in international competitiveness. If, as in the 1970s, the United States tries to keep interest rates low, for example, in order to try to expand the economy, while its trading partners try to keep interest rates higher to restrain demand and control inflation, international investors will find it worthwhile to move some of their short-term liquid assets out of the United States and into foreign assets. This will lower the demand for dollars in the foreign exchange market and produce a depreciation of the dollar. Such a dollar depreciation will make imports more expensive and exports cheaper. Exports will rise and imports will fall, expanding output and employment in export-oriented and import-competing industries at the expense of industries less involved in trade.

Similarly, if, as more recently, the U. S. pursues policies that raise interest rates in the United States relative to those in the rest of the world, international investors will find it worthwhile to move assets from the rest of the world into the United States. This will cause the value of the dollar to rise, reducing exports and increasing imports. Output and employment in the traded-goods sector will fall relative to output and employment in the rest of the economy.

Exchange rate movements arising from these kinds of macroeconomic shocks should ultimately be self-correcting unless international investors are content to see an ever-increasing proportion of their portfolios consist of dollar-denominated assets. In the meantime, however, volatile exchange rate movements may give false or confusing signals about the longer term strength or weakness of job prospects in particular industries or regions. Adjustments in response to such false signals would be inappropriate and inefficient. Policies designed to ease the burdens of those affected by such short run shocks should not encourage the same kinds of adjustments as policies designed to cushion the shocks due to longer term changes in international competitiveness.

Summary

The growing internationalization of the American economy is only one factor affecting U. S. labor markets. Moreover, trade affects labor markets at many different levels. Impacts on individual workers, firms, or communities must be distinguished from impacts on broad industrial sectors or geographical regions, and both must be distinguished from impacts on total employment and the economy as a whole. The policy response appropriate to labor market problems arising from cyclical variations in world demand or the exchange rate may well be different from the response that is appropriate to longer run structural adjustment problems.

This study falls far short of addressing all of these issues in a fully adequate manner. What it does do, however, is begin to address the question of which industries, occupations, demographic groups, and regions have been most affected by changing trade patterns over the last several years as well as the question of how effective past policies have been in dealing with the problems of workers dislocated by trade or other economic change. Such information should help in the design of new policies to address these problems.

III. The Impact of Trade on Output and Employment[5]

Estimation Methods

To estimate the impact of trade on employment in any industry it is important to recognize both direct and indirect effects. The importing of automobiles, for example, has a direct effect on output and employment in the automobile industry; but it also has an effect on all industries that supply inputs to the automobile industry. Thus, output and employment in the steel industry are reduced as a result of automobile imports to the extent that those imports reduce the demand for steel from the domestic automobile industry. By the same argument, exports of aircraft encourage output and employment in steel to the extent that more domestic steel production is required than if there were no aircraft exports.

Taking into account these direct and indirect effects, we can identify for any industry the output and employment that would be required to satisfy domestic demand for that industry's products; the amount by which export requirements supplement those output and employment requirements; and the amount by which output and employment are reduced when domestic requirements are satisfied by imports rather than by domestic production. Where the net impact of trade is positive, more jobs are created than are needed to satisfy domestic requirements alone; where the net impact of trade is negative, actual employment is less than what is required to satisfy domestic demands. Appendix A provides a formal discussion of this methodology.

Impact on Aggregate Employment

Figure 2 shows our estimates of the total number of jobs across all industries created by exports and the number lost to imports in 1972, 1977, 1979, and 1984. Between 1972 and 1979, both the number of jobs created by exports and the number of jobs replaced by imports increased, but the former grew more rapidly and the net contribution of trade to employment rose from under 100,000 jobs in 1972 to nearly a million jobs in 1979. With the rise in the value of the dollar and the emergence of a large trade deficit, the contribution of exports actually fell slightly between 1979 and 1984 while jobs replaced by imports increased substantially. The result was that by 1984 the number of jobs replaced by imports exceeded the number of jobs created by exports by more than a million.

Figure 3 shows the impact of trade on employment growth for three subperiods between 1972 and 1984. For each period, the lefthand bar shows the actual gain in employment, the middle bar shows the increase in employment that would have been required to satisfy domestic demand with domestic production, and the righthand bar represents the net contribution of trade to employment growth. It is interesting to note that the employment growth needed to meet domestic requirements was about the same in the 1972-1977 period as it was in the 1979-

---

5 Young, Lawson, and Duncan, "Trade Ripples across U. S. Industries," Office of Business Analysis, U. S. Department of Commerce follow a similar approach and reach similar conclusions to those reached in this section.

FIGURE 2

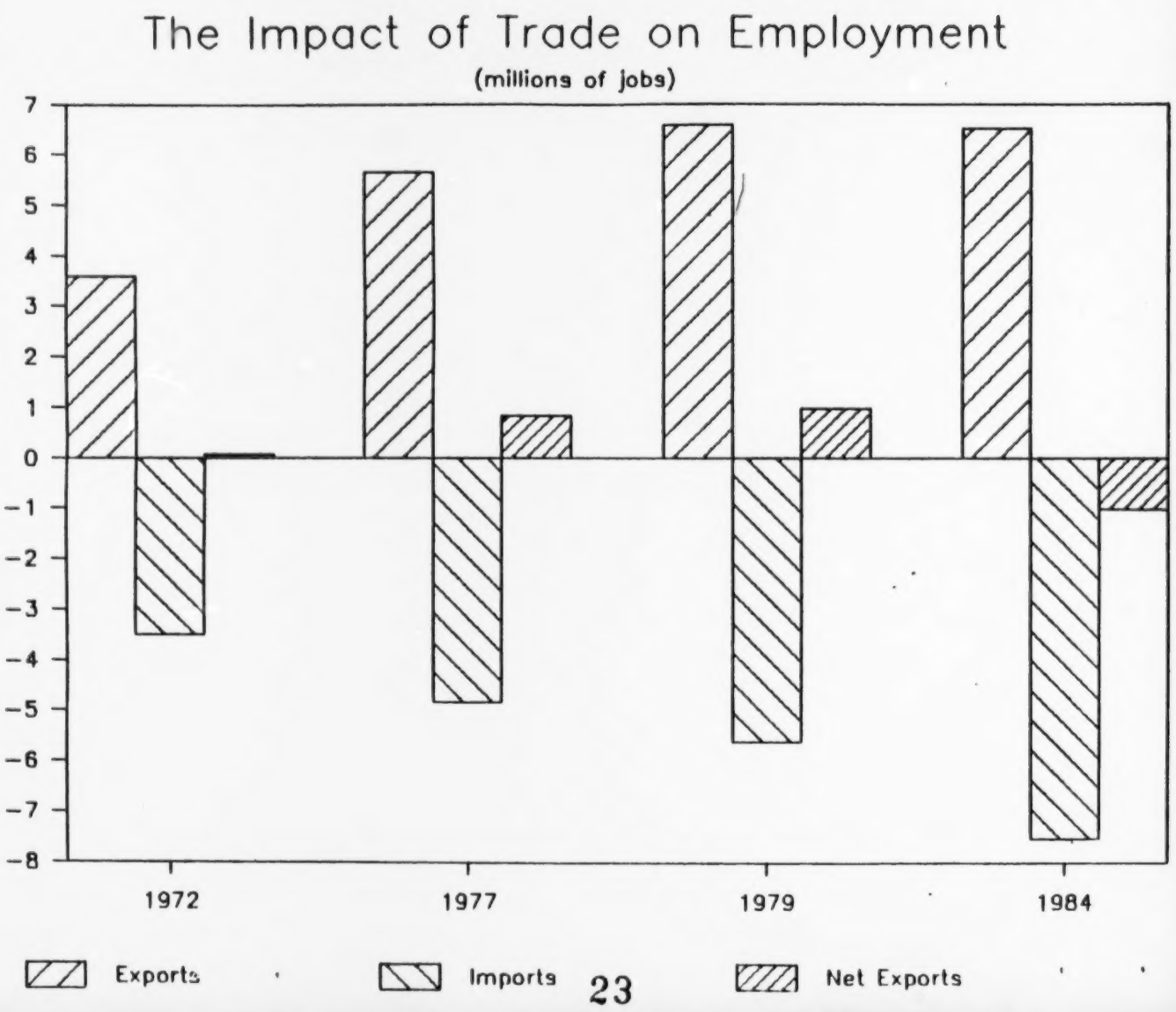

The Impact of Trade on Employment
(millions of jobs)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
1972
1977
1979
1984
Exports
Imports
Net Exports

FIGURE 3

Changes in Employment, 1972–1984
(millions of jobs)
10
9
8
7
6
5
4
3
2
1
0
−1
−2
1972–77
1977–79
1979–84
Actual
Domestic Use
Net Exports

1984 period, yet actual employment growth was much greater in the earlier period. This is because the net impact of trade in the earlier period was to increase employment growth by almost a million jobs, while the net impact in the latter period was to reduce employment growth by about 2 million jobs.

In interpreting these results, it is important to recognize that the level of imports and domestic demand are critically sensitive to the macroeconomic policies that are being pursued. It is moot, as we argued earlier, whether the Federal Reserve actually would have allowed domestic demand to grow as much as it did between 1979 and 1984 if it had not been for the effect of the strong dollar and import competition in restraining inflation. But if the Fed had been accommodative and if the employment effects of trade had remained as they were in 1979, an additional 2 million jobs would have been created and the unemployment rate would have come down to 5.6 percent by 1984. This is well below the 7.5 percent unemployment rate actually experienced in 1984, but it is not so very far below the 5.8 percent rate experienced in 1979 and it is equal to the rate experienced in 1972.

Impact on Specific Industries

Turning from the effects of trade on aggregate employment to the effect on different industries, this study looks at employment changes in the 79 industries included in the input-output table. The industries account for about 87 percent of the jobs in the economy (the government and household sectors, except for government enterprises, are excluded because they lie outside the input/output structure and are unaffected by trade.[6]). Table 2 reports our estimates of employment growth in the 1972-1979 and the 1979-1984 periods for different categories of industries. Industries gaining employment were divided into those in which the gain in employment was attributable entirely to trade (that is, industries that would have experienced a loss of jobs based on domestic demand alone but that experienced an increase in jobs as a result of the strong positive contribution of trade to employment growth); industries in which positive effects attributable to trade reinforced positive effects associated with growing domestic demand; and industries in which the employment effects attributable to trade were negative but not large enough to overcome strong positive effects attributable to domestic demand.

Even in the 1972-1979 period, few industries had what would have been employment losses reversed by strong gains attributable to trade (these industries accounted for about 3 percent of total employment). However, there were no such industries in the 1979-1984 period. Trade augmented employment growth arising from growing domestic demand in industries accounting for well over half of total employment in the earlier period, but in industries accounting for only a quarter of all employment in the latter period. Negative trade effects reduced employment growth in industries accounting for 28.5 percent of all employment in the earlier period but in industries accounting for nearly half of all employment in the latter period. Overall, industries accounting for 89 percent of all employment experienced increases in employment between 1972 and 1979 and trade contributed to this employment growth in industries accounting for 60 percent of all employment. Industries accounting

---

6 The data shown in Figures 1 to 3 include the household and government sectors, as do the data on occupations, demographic groups, and regions reported in Section IV of the study.

TABLE 2

The Impact of Trade on Employment Growth
(thousands of jobs)

	Number of Industries	Share of Base Year Employment	Change in Employment	Change Due To Trade	Percent Change in Employment
1972-79					
Industries with Employment Gains					
Caused by Trade	5	2.9	115	347	5.5
Augmented by Trade	45	57.6	11,297	845	27.7
Diminished by Trade	13	28.5	4,166	-334	20.6
	63	89.0	15,578	859	24.7
Industries with Employment Losses					
Caused by Trade	2	0.4	-46	-67	-15.4
Augmented by Trade	2	3.3	-176	-95	-7.5
Diminished by Trade	12	7.3	-521	217	-10.1
	16	11.0	-743	55	-9.5
	79	100.0	14,835	914	20.9
1979-84					
Industries with Employment Gains					
Caused by Trade	0	.0	0	0	0.0
Augmented by Trade	6	24.1	1,471	411	7.1
Diminished by Trade	19	46.9	6,654	-660	16.5
	25	71.1	8,125	-249	13.3
Industries with Employment Losses					
Caused by Trade	17	9.2	-668	-1,067	-8.4
Augmented by Trade	34	14.1	-1,874	-700	-15.5
Diminished by Trade	3	5.6	-150	20	-3.1
	54	28.9	-2,692	-1,748	-10.8
	79	100.0	5,433	-1,996	6.3

SOURCE: Appendix B.

for 70 percent of all employment experienced increases in employment between 1979 and 1984, but trade effects contributed to this growth in industries accounting for barely a quarter of all employment.

Industries experiencing job losses were divided in a similar fashion into those in which positive effects attributable to trade helped soften what would have been a larger loss in jobs based on domestic demand alone, those in which trade effects aggravated the loss in jobs, and those in which negative trade effects reversed what would have been an employment gain based on domestic demand alone. Between 1972 and 1979, industries accounting for 11 percent of all jobs experienced losses in employment, but trade was a contributing factor in industries accounting for only 4 percent of all jobs. Between 1979 and 1984, in contrast, industries experiencing a drop in employment accounted for nearly 30 percent of all employment; industries in which trade effects contributed to the decline accounted for nearly a quarter of all employment; and trade was the cause of the decline in industries accounting for almost 10 percent of total employment.

Table 3 lists, for the 1972-1979 and 1979-1984 periods, the industries with losses in employment in which trade played a substantial role in causing the industry to lose jobs (a complete list of employment effects by input-output industry can be found in Appendix B). In the 1972-1979 period, the only industries in which trade played an important role in causing job losses were apparel, government enterprises, leather, and footwear. Total job losses in these sectors were 222,000 jobs. Losses attributable to trade were so large that they reversed what would have been an employment gain in the leather and footwear industries. In apparel, nearly 70 percent of the loss in jobs was attributable to the effect of trade.

Many more industries suffered employment losses in which trade was a substantial contributing factor in the 1979-1984 period. Among all such industries, the loss in jobs was 2.5 million, with 6 industries losing more than 100,000 jobs accounting for 40 percent of that loss. In steel, livestock, food and kindred products, and many machinery industries, trade effects were important but they were not the sole cause of job losses. In automobiles, apparel, and other textile mill products, however, negative trade effects were large enough to overcome positive domestic demand effects. In other words, these industries would have gained jobs based on domestic demand alone.

"Constant Trade" Estimates of Changes in Employment due to Trade

As we have emphasized, these results must be interpreted cautiously. In particular, the employment attributable to domestic use in each industry should not be interpreted as the employment that would result if the economy were closed to trade. Such an interpretation would be incorrect because it would fail to take into account the fact that if the economy were closed to trade the level of domestic demand would almost surely be different. For example, aggregate employment attributable to domestic demand in 1984 was 92.2 million (in the industries included in the input output table), yet actual employment was only 91.2 million. As we argued earlier, it is possible that the Fed would have allowed employment to grow to 92.2 million if net exports had remained comparable to their 1979 level over the entire period, but it is much more likely that it would have exercised sufficient restraint to keep employment to the 91.2 million actually experienced (or perhaps even less given the greater inflationary pressure we would have experienced in a world without a rising dollar and expanding trade deficit).

TABLE 3

Employment Changes in Industries with Declining Employment and Negative Trade Effects (thousands of jobs)

Industry	Change in Employment	Percent Change	Percent of Decline Attributable to Trade[1]
1972-79			
33 Leather tanning and finishing	-5	-20.0	128.4
34 Footwear and other leather products	-41	-15.0	146.7
18 Apparel	-133	-9.0	69.8
78 Federal government enterprises	-43	-5.0	4.2
	-222.0	-8.4	72.6
1979-84			
37 Primary iron and steel manufacturing	-351	-39.2	30.1
1 Livestock and livestock products	-130	-13.3	18.1
14 Food and kindred products	-129	-7.3	31.0
59 Motor vehicles and equipment	-128	-12.9	134.8
18 Apparel	-123	-9.1	178.2
40 Heating, plumbing, and structural metal pr	-100	-16.4	17.4
45 Construction and mining machinery	-98	-35.5	59.7
12 Maintenance and repair construction	-93	-6.9	3.1
16 Broad and narrow fabrics, yarn and thread	-91	-17.1	114.1
20 Lumber and wood products, except container	-91	-11.7	32.5
36 Stone and clay products	-77	-14.7	25.6
44 Farm and garden machinery	-73	-39.7	6.8
42 Other fabricated metal products	-67	-12.3	64.0
38 Primary nonferrous metals manufacturing	-67	-15.8	151.1
47 Metalworking machinery and equipment	-66	-17.4	37.8
7 Coal mining	-63	-24.1	29.8
49 General industrial machinery and equipment	-56	-17.0	91.8
41 Screw machine products and stamping	-54	-14.9	79.9
64 Miscellaneous manufacturing	-54	-11.2	182.3
34 Footwear and other leather products	-54	-23.3	110.4
All others	-575.0	-8.5	91.9
	-2,542.0	-12.7	-69.5

SOURCE: Appendix B.

1. 100 x change in employment attributable to trade/change in employment.

To gain some insight into what the pattern of employment growth would have been in the absence of trade effects if the Fed had allowed the same overall employment growth as actually occurred, we made a set of "what if" estimates of employment growth based on two assumptions: 1) if net exports as a proportion of the demand for each industry's product had remained constant between 1979 and 1984, overall aggregate demand would have grown by the same amount as it actually did; and 2) with constant trade as in 1), the share of domestic demand for each commodity in overall domestic demand would have been the same as it actually was. In other words, we assumed the same pattern of domestic use as we actually experienced, but adjusted its level to be consistent with the employment growth actually experienced. We made similar calculations for the 1972-79 period.

The results of this experiment are reported in tables 4 and 5. The first columns of each table show the actual change in employment for the given industry. The next column shows our estimate of what employment growth would have been under our "what if" constant trade assumptions. The third shows the actual change less the "what if" change, and is a measure of the impact of trade on employment growth corrected for aggregate demand effects. The final column expresses this difference as a share of actual end-period employment.

For the 1972-1979 period, employment would have been lower in agriculture and manufacturing and higher in all other sectors if trade effects had remained neutral. Without the fall in the value of the dollar and the increase in net exports experienced over this period, agricultural employment would have fallen by 530,000 jobs rather than 159,000 jobs and manufacturing employment would have grown by 1.8 million jobs instead of 2.0 million jobs. Employment growth in trade and services would have been even greater than we actually experienced.

Between 1979 and 1984, however, the rise in the value of the dollar and the increase in the trade deficit hurt just those industries that were helped by trade in the earlier period. Had trade effects remained neutral between 1979 and 1984, there would have been 1.7 million more manufacturing jobs in 1984 and 116,000 more farming jobs. Trade and service employment would have been correspondingly lower.

Summary

In summary, it is important to recognize that the pattern of imports and exports underlying the employment effects reported in this paper are the result not only of longer run trends in U. S. competitiveness, but also of shorter run price and income effects attributable to macroeconomic policy. In particular, the combination of tight monetary policy and large federal budget deficits that has been pursued since 1981 has almost certainly had a lot to do with the sharp rise in the value of the dollar, which in turn has had a lot to do with the large trade deficit. Thus, it is not trade per se, or the openness of the American economy per se that is the cause of the sharp change in the pattern of employment growth reported in this paper. It would be more accurate to ascribe these changes in large measure to trade effects resulting from the particular mix of monetary and fiscal policy that we have pursued in this country over the last few years.

TABLE 4

Actual Changes in Employment Compared With
Constant Trade Changes in Employment, 1972-1979
(thousands of jobs)

	Actual Change	Constant Trade Change[1]	Actual Change Less Constant Trade Change	Percent of 1979 Employment Attributable to Trade[2]
Agriculture, forestry, fisheries	-159	-530	371	11.1
Mining	186	269	-83	-11.8
Construction	1,171	1,236	-65	-1.1
Manufacturing	1,987	1,764	223	1.0
Transport., communic., utilities	696	705	-9	-0.2
Wholesale and retail trade	2,695	2,969	-274	-1.6
Finance, insurance, and real estate	1,231	1,269	-38	-0.7
Services	6,888	6,995	-107	-0.4
Government enterprises	140	157	-17	-1.2
	14,835	14,835	0	0

1. Difference between actual 1979 employment and estimated 1979 employment assuming the same level of 1979 employment but the 1972 ratio of net exports to final demand in each industry.

2. 100 x (actual change - constant trade change)/(1979 employment).

TABLE 5

Actual Changes in Employment Compared With
Constant Trade Changes in Employment, 1979-1984
(thousands of jobs)

	Actual Change	Constant Trade Change[1]	Actual Change Less Constant Trade Change	Percent of 1984 Employment Attributable to Trade[2]
Agriculture, forestry, fisheries	-47	69	-116	-3.5
Mining	-53	-94	41	6.4
Construction	41	-90	131	2.2
Manufacturing	-1,622	53	-1,675	-8.5
Transport., communic., utilities	104	-26	130	2.3
Wholesale and retail trade	1,103	326	777	4.2
Finance, insurance, and real estate	782	650	132	2.1
Services	5,127	4,560	567	1.9
Government enterprises	-2	-14	12	0.8
	5,433	5,433	0	.0

1. Difference between actual 1984 employment and estimated 1984 employment assuming the same level of 1984 employment but the 1979 ratio of net exports to final demand in each industry.

2. 100 x (actual change - constant trade change)/(1984 employment).

IV. Effect on Occupations, Demographic Groups, and Regions

Estimation Methods

To estimate the impact of changing trade patterns on different occupations, demographic groups, and regions, Census data on the distribution of jobs by occupation and industry, by demographic group and industry, and by region and industry were combined with our estimates of the number of jobs in each industry attributable to trade. For example, to find the impact of changing trade patterns on managerial and professional occupations we estimated the proportion of employment in each industry accounted for by managerial and professional jobs and the number of jobs in each industry attributable to trade. Multiplying the two together for each industry gives the number of managerial and professional jobs in each industry attributable to trade. Aggregating over all industries gives the total number of managerial and professional jobs in the economy attributable to trade. The number of jobs attributable to domestic demand was then the difference between the total number of jobs in each occupation and the number of jobs attributable to trade.

Occupations

Table 6 shows that trade created jobs in all major occupational and demographic groups between 1972 and 1979 and trade cost jobs in all groups between 1979 and 1984. This is consistent with our finding of substantial positive employment effects attributable to trade in the earlier period and substantial negative effects in the later period. However, as we have stressed repeatedly, one cannot infer an effect of trade on total employment in the economy from these numbers. A more reasonable assumption is probably that overall employment growth would have been about the same in any period no matter what the contribution of trade to employment growth. Thus, trade effects are best understood in terms of their impact on the composition of employment rather than on its level.

With this consideration in mind, we conducted a "what if" experiment similar to the one discussed in section II above in order to estimate the relative impact of trade on different occupations, demographic groups, and regions. The purpose of this experiment was to develop estimates of the growth in the number of jobs in each occupation, demographic group, and region that would have taken place if the pattern of trade effects had been different but the pattern of domestic demand and the amount of employment growth had been the same.

Table 6 shows that 914,000 of the 16.7 million new jobs created between 1972 and 1979 were attributable to trade and that trade effects added to employment growth in all major occupational groups. However, if trade effects had remained constant and we had experienced the same growth in jobs and the same pattern of growth in domestic consumption, the pattern of employment growth would have been quite different. Fewer jobs would have been created for farming, forestry, and fishing occupations and for operators and laborers and more jobs would have been created for all other workers. The difference between the number of jobs actually created in each occupation and the number of jobs that would have been created under our hypothetical assumptions represents the number of jobs that can be attributed to changing trade patterns under the assumption that trade effects do not alter the aggregate level of unemployment.

TABLE 6

Impact of Trade on Changes in Employment, by Occupation
(thousands of jobs)

	Actual Change	Change Due to Domestic Use	Change Due to Trade	Constant Trade Change	Actual Change Less Constant Trade Change
1972-79					
Executive, admin., management	2,638	2,608	30	2,686	-48
Professionals	3,547	3,461	86	3,588	-41
Technical, sales, admin.support	4,808	4,671	137	4,932	-124
Services	2,058	2,014	44	2,138	-80
Farming, forestry, fishing	-330	-674	344	-648	318
Precision, craft, repair	2,252	2,200	52	2,306	-54
Operator, laborers	1,697	1,475	222	1,667	30
	16,670	15,756	914	16,670	0
1979-84					
Executive, admin., management	852	1,004	-152	734	118
Professionals	-762	-619	-143	-905	143
Technical, sales, admin.support	6,968	7,216	-248	6,480	488
Services	1,067	1,067	0	727	340
Farming, forestry, fishing	804	961	-157	1,222	-418
Precision, craft, repair	-62	323	-385	-6	-56
Operator, laborers	-2,686	-1,774	-912	-2,069	-617
	6,181	8,177	-1,996	6,181	0
1972-84					
Executive, admin., management	3,490	3,612	-122	3,420	70
Professionals	2,785	2,842	-57	2,682	103
Technical, sales, admin.support	11,776	11,887	-111	11,413	363
Services	3,125	3,081	44	2,864	261
Farming, forestry, fishing	474	287	187	574	-100
Precision, craft, repair	2,190	2,523	-333	2,300	-110
Operator, laborers	-989	-289	-691	-402	-587
	22,851	23,934	-1,083	22,851	0

Employment in the farming, forestry, and fishing occupations was 11.4 percent higher in 1979 than it would have been without the changes in the pattern of trade that took place between 1972 and 1979. In the other major occupational groups, the effect of changing trade patterns on 1979 employment levels was less than 1 percent of total employment.

This pattern was reversed between 1979 and 1984. Had trade effects remained constant at their actual 1979 levels, there would have been more jobs for workers in farming, forestry, and fishing occupations, in precision, craft, and repair occupations, and for operators and laborers. Changing trade patterns reduced employment in these occupations by more than a million jobs and created more than a million more jobs in other occupations than would have been created under constant trade conditions. Farming, forestry, and fishing employment was 12 percent lower in 1984 as a result of changing trade patterns between 1979 and 1984; and employment among operators and laborers was 4 percent lower. Employment in service occupations was more than 2 percent higher and employment in other white collar and professional occupations was 1 percent higher. Thus, changing trade patterns benefitted white collar and service occupations at the expense of blue collar and rural occupations between 1979 and 1984.

These results for 1979-1984 color the entire 1972-1984 period. Changing trade patterns between 1972 and 1984 resulted in 3.5 percent fewer jobs for operators and laborers and 2.8 percent fewer jobs for workers in farming, forestry, and fishing occupations. Employment in service occupations was 2.8 percent higher and employment in white collar and professional occupations was about 1 percent higher than it would have been if trade patterns had remained constant over the entire 1972-1984 period.

Demographic Groups

Turning to a consideration of the impact of trade on demographic groups, and sticking to our "what if" assumptions for purposes of comparison, trade benefitted males, nonwhites, and mature workers between 1972 and 1979 at the expense of females, whites, and teenagers (see Table 7). Between 1979 and 1984, however, trade benefitted females, whites, and teenagers. In general, the magnitude of these effects was one percent or less of any group's total employment and in no case did changing trade patterns raise or lower any group's employment by more than 100,000 jobs. Over the entire 1972-84 period, changing trade patterns raised female, white, and teenage employment at the expense of male, nonwhite, and mature worker employment, but the magnitude of these effects was quite modest.

Regions

Among regions, trade effects benefitted the northcentral region between 1972 and 1979 and the west and south between 1979 and 1984. However, changing trade patterns did not raise or lower any region's employment by any more than one-half of one percent in either period. Over the entire period, changing trade patterns added slightly to employment growth in the south and west at the expense of the northeast and northcentral regions.

Summary

In general, these results accord with our common sense views of what has happened over the past several years. By stimulating employment in services and

TABLE 7

Impact of Trade on Changes in Employment by Demographic Group and Region
(thousands of jobs)

	1972-1979				1979-1984				1972-1984			
	Actual Change	Change Due to Trade	Actual Change Less Constant Trade Change	Percent of 1979 Employment	Actual Change	Change Due to Trade	Actual Change Less Constant Trade Change	Percent of 1984 Employment	Actual Change	Change Due to Trade	Actual Change Less Constant Trade Change	Percent of 1984 Employment
Sex												
Male	6,711	616	96	0.2	1,484	-1,430	-372	-0.6	8,195	-814	-276	-0.5
Female	9,960	298	-96	-0.2	4,698	-566	372	0.8	14,658	-268	276	0.6
Race												
White	13,889	789	-21	-0.0	4,861	-1,698	82	0.1	18,750	-909	61	0.1
Nonwhite	2,782	125	21	0.2	1,320	-298	-82	-0.6	4,102	-174	-61	-0.5
Age												
16-19	1,337	55	-25	-0.3	-1,639	-46	97	1.5	-302	9	72	1.1
20+	15,334	859	25	0.0	7,821	-1,950	-97	-0.1	23,155	-1,092	-72	-0.1
Region												
Northeast	2,070	185	-21	-0.1	821	-479	-42	-0.2	2,891	-294	-63	-0.3
Northcentral	3,518	308	55	0.2	-399	-616	-180	-0.7	3,119	-308	-125	-0.5
West	5,026	168	-6	-0.0	1,995	-304	100	0.5	7,021	-137	94	0.4
South	5,614	253	-30	-0.1	3,323	-604	116	0.3	8,937	-350	87	0.2

discouraging it in farming and manufacturing, changing trade patterns have stimulated white collar employment at the expense of blue collar employment. Furthermore, the kinds of jobs and industries whose employment has been stimulated typically employ a greater proportion of women and younger workers than the industries in which job growth has been discouraged. The only somewhat surprising result is that nonwhites have not shared in the gains achieved by women and teenagers.

V. Projections to 1990

How will changing trade patterns over the next several years affect workers in different industries, occupations, demographic groups, and regions? To answer this question we examined patterns of employment in 1990 under four different macroeconomic scenarios. These scenarios were selected to illustrate the sensitivity of employment growth to different plausible combinations of events.

Four Macroeconomic Scenarios

The first scenario assumes a continued steady recovery in the United States (3.75 percent average annual real growth between 1984 and 1990) so that the unemployment rate falls to just below 6 percent by 1990. The rest of the world is assumed to recover as well, but the dollar is assumed to remain strong. Such a scenario is likely if no substantial progress is made to reduce the federal budget deficit; monetary policy allows a steady, non-inflationary expansion of the economy; and the resulting high real interest rates outweigh fears of a collapse of the dollar in continuing to attract foreign investment to the United States.

The second scenario maintains the assumption of strong demand conditions in the United States and the rest of the world, but it includes a steady depreciation of the dollar that improves the U. S. trade balance. This is the most optimistic scenario because it assumes an orderly shrinking of the federal budget deficit and the current account deficit.

The third scenario assumes a weakening of the U. S. and world expansion so that real growth averages only 3.5 percent per year between 1984 and 1990 and the unemployment rate is well above seven percent in 1990. The dollar is assumed to depreciate, so that the U. S. trade balance improves despite a general weakening of the economy.

The final scenario assumes a weakening of the U. S. and world economy and the imposition of import restraints in the United States. The imposition of restraints reduces imports, but exports are reduced as well, in large measure because of the rise in the value of the dollar likely to follow from the imposition of import restraints.

Results

Table 8 provides a summary of the assumptions about how different components of GNP are projected to grow between 1984 and 1990 and what the composition of GNP is projected to be in 1990 under these four different macroeconomic scenarios. The first and second scenarios assume stronger overall growth and a higher level of 1990 GNP than the latter two scenarios assume. The composition of GNP in the first scenario is the same as the composition of 1985 GNP and thus represents the assumption that we simply hold our own with respect to the trade deficit. In the second scenario, consumption is down on the assumption of a tax increase, exports are up, and imports are down. In the third and fourth scenarios, investment as a share of GNP is assumed to fall as a result of the recession. Net exports rise in the third because of the assumed depreciation of

TABLE 8

Macroeconomic Assumptions

	Scenario			
	I	II	III	IV
Change, 1984-1990	(in billions of 1984 dollars)			
Consumption	2,974	2,923	2,890	2,926
Investment				
Fixed Investment	745	763	644	644
Inventories	32	32	45	45
Net Exports				
Exports	425	480	450	423
Imports	-557	-507	-500	-509
Government				
Defense	292	219	293	293
Federal NonDefense	91	91	95	95
State and Local	566	566	585	585
	4,568	4,568	4,502	4,502
Composition of 1990 GNP	(percent)			
Consumption	65.1	64.0	64.2	65.0
Investment				
Fixed Investment	16.3	16.7	14.3	14.3
Inventories	0.7	0.7	1.0	1.0
Net Exports				
Exports	9.3	10.5	10.0	9.4
Imports	-12.2	-11.1	-11.1	-11.3
Government				
Defense	6.4	4.8	6.5	6.5
Federal NonDefense	2.0	2.0	2.1	2.1
State and Local	12.4	12.4	13.0	13.0
	100.0	100.0	100.0	100.0

the dollar but they do not rise appreciably in the fourth because of the adverse side effects associated with trade restraints.

Table 9 shows estimated employment under these different scenarios by two-digit industry. A comparison between the first and the second scenarios indicates how reducing the trade deficit would be expected to influence the pattern of employment. Sixty thousand more jobs are created in agriculture between 1984 and 1990 and 416,000 more jobs are created in manufacturing in the second scenario, which combines strong growth with a reduced trade deficit, than are created in the first scenario, which combines equally strong growth with a continuing large trade deficit. Thus, a failure to address the problems giving rise to an overvalued dollar and a large trade deficit will continue to hurt job growth in those industries that have suffered in the early 1980s. However, a comparison of either of the first two scenarios with either of the last two scenarios points out the importance of achieving strong growth and high employment to providing satisfactory job growth.

Table 10 shows differences among the scenarios with respect to job growth by occupation, demographic group, and region under the assumption that the pattern of employment by occupation, etc. across industries remains as it was in 1980. The last three columns show the difference in employment between the first scenario (no change in the pattern of aggregate demand) and the other scenarios. Comparing the first and second scenarios, an orderly fall in the value of the dollar and a reduction in the trade deficit will increase job opportunities for rural occupations and blue collar occupations at the expense of white collar occupations; for jobs traditionally held by males, whites, and mature workers; and in the northcentral and south regions. Once again, achieving strong growth and avoiding a recession is even more important for all occupations.

These results regarding where jobs are being lost and how important trade has been in causing job losses provide valuable information for developing effective public policies for dealing with the problems of dislocated workers. In the next section we evaluate the evidence on the problems of dislocated workers and the effectiveness of public policies in addressing those problems.

TABLE 9

Employment Growth by Industry, 1984-1990
(thousands of jobs)

	Scenarios				Difference between Scenarios[1]		
	I	II	III	IV	I-II	I-III	I-IV
Agric. forestry, fisheries	-173	-113	-176	-188	-60	3	15
Mining	-55	-23	-45	-50	-32	-10	-5
Construction	1,099	1,178	529	534	-79	570	565
Manufacturing	91	505	-165	-264	-414	256	355
Transport., communic., utilit.	-33	-33	-126	-118	0	93	85
Wholesale and retail trade	751	667	129	237	84	622	514
Finance, insur.,& real estate	1,176	1,110	999	1,061	66	177	115
Services	5,734	5,316	4,959	5,240	418	775	494
Government enterprises	450	437	401	416	13	49	34
	9,040	9,043	6.505	6,866	-4	2,535	2,172

1. Difference in 1990 employment between the first scenario (strong growth, continued large trade deficit) and each of the other scenarios.

TABLE 10

Employment Growth by Occupation, Demographic Group, and Region, 1984-1990
(thousands of jobs)

	Scenarios				Difference between Scenarios[1]		
	I	II	III	IV	I-II	I-III	I-IV
Occupation							
Executive, admin., management	1,025	1,005	765	812	20	259	213
Professionals	1,981	1,871	1,674	1,765	110	306	216
Technical, sales, admin.support	2,829	2,729	2,075	2,226	100	754	604
Services	1,718	1,605	1,383	1,476	114	335	242
Farming, forestry, fishing	-103	-53	-114	-123	-50	11	20
Precision, craft, repair	962	1,073	483	489	-111	479	473
Operator, laborers	628	814	239	223	-186	389	406
	9,040	9,043	6,505	6,866	-3	2,535	2,174
Sex							
Male	3,953	4,162	2,491	2,607	-209	1,462	1,346
Female	5,087	4,881	4,014	4,259	207	1,073	828
	9,040	9,043	6.505	6,866	-3	2,535	2,174
Race							
White	7,746	7,754	5,542	5,852	-8	2,204	1,893
Nonwhite	1,295	1,289	964	1,014	5	331	281
	9,040	9,043	6.505	6,866	-3	2,535	2,174
Age							
16-19	493	485	304	332	8	189	160
20+	8,548	8,558	6,202	6,534	-11	2,346	2,014
	9,040	9,043	6,505	6,866	-3	2,535	2,174
Region							
Northeast	2,081	1,068	1,537	1,621	13	544	460
Northcentral	2,266	2,282	1,622	1,710	-17	644	556
West	1,796	1,782	1,293	1,369	14	502	427
South	2,904	2,917	2,057	2,171	-13	846	733
	9,046	9,050	6,509	6,870	-3	2,537	2,176

1. Difference in 1990 employment between the first scenario and each of the other three.

VI. The Number and Characteristics of Dislocated Workers

Estimates of the number of dislocated workers, and their characteristics, depend critically on the set of criteria used in defining a dislocated worker. A range of high and low estimates from recent studies is shown in Table 11. As the table indicates, dislocated workers may be as little as 1 percent of the total unemployed or as much as 20 percent, depending on the definition used.

The early estimates by Bendick and Devine and by the Congressional Budget Office (CBO) are from the regular monthly unemployment survey and use very similar approaches. Both cover job losers (as opposed to job leavers, entrants, or reentrants) and rely heavily on duration of unemployment and whether the worker was from a declining industry, occupation, or region in defining dislocation. Bendick and Devine found that coming from a declining industry or occupation had little effect on re-employment prospects but that coming from a declining region did.

Estimates derived from UI administrative data in five states by Crosslin et al. indicate that the number of dislocated workers—defined as those terminated from a declining industry who subsequently exhausted their UI benefits—is probably in the range of 10 to 20 percent of all unemployed workers. Crosslin et al. consistently found that hardship—as measured by earnings losses—was greatest for older rather than younger workers, for those who had exhausted their UI benefits rather than those who had not; and for those terminated from a declining rather than from an expanding industry, especially if their industry was experiencing a large decline in employment. They argue that these characteristics and the administrative data they relied on could be used to identify dislocated workers most in need of assistance in each state.

The most recent study of the dislocated worker population is based on a special survey undertaken by the BLS (as a supplement to the January 1984 Current Population Survey). This survey looks at the cumulative number of job losers between January 1979 and January 1984 where the job loss was due to a plant closing or move, slack work, or abolishment of a position or shift. Any worker with less than 3 years tenure on the previous job was excluded. During the survey period an estimated 5.1 million workers with the requisite 3 years of job tenure lost their jobs for one of the above reasons. Thus, by this definition there were 5.1 million dislocated workers over this five year period.

In trying to settle on a working definition of dislocated workers, it is useful to review the language used by Congress in setting up Title III of the Job Training and Partnership Act (JTPA):

(a) Each State is authorized to establish procedures to identify substantial groups of eligible individuals who:

(1) have been terminated or laid-off or who have received a notice of termination or lay-off from employment, are eligible for or have exhausted their entitlement to unemployment compensation, and are unlikely to return to their previous industry or occupation;

(2) have been terminated, or who have received a notice of termination

TABLE 11

Estimate of the Number of Displaced Workers based on Different Assumptions

Study	Data Source and Date	Definition of Displaced Worker	Number	Percent of total Unemployed for same period*
Bendick & Devine	CPS - March 1980	Able-bodied adult (22-64) job losers		
		- unemployed for more than 26 weeks in a declining industry	90,000	1
		- unemployed for more than 8 weeks in declining region	895,000	14
CBO	CPS - March 1980 (aged to December 1981 based on actual data and projected to January 1983 under different economic assumptions	Job losers from declining industries plus all other unemployed if the declining industry also in a declining region (low growth trend)	2,165,000	19
		Job loser from declining industries unemployed 26 weeks or more (high growth trend)	100,000	1
Crosslin et al.	CWBH, 1979-80 (5 states, data aged to 1983)	Job loser from declining industry		
		- UI exhaustee	-	11-19
		- UI exhaustee and age 45 and over	-	2-4
BLS	Supplement to CPS - January 1984	Cumulative number of job losers between January 1979 and January 1984 where loss of job was due to (1) closing down or moving of a plant or company, (2) slack work, or (3) abolishment of position or shift, and where tenure on last job was at least 3 years	5,091,000	9
		- excluding those who lost job for reason (2)	3,121,000	5
		- including those with less than 3 years tenure on last job	11,500,000	20
		- excluding those without work for less than 26 weeks	2,299,000	4
		- excluding those without work for less than 5 weeks	3,918,000	7

SOURCES: Bendick and Devine in NCEP, 7th Annual Report; CBO (July 1982); Crosslin et al. for NCEP, 1984; Flaim and Sehgal, MLR, July 1985; authors' calculations.

* Where the estimate of the number of displaced workers was for a single reference week (as in Bendick and Devine, CBO), the total number of unemployed was also for a typical week during the year. Where the estimate of the number of displaced workers was a cumulative retrospective figure over a number of years (as in BLS), the total number of unemployed was similarly calculated using the work experience data from the March supplement of the CPS with an adjustment made for double counting of those unemployed for more than one calendar year. See text for further explanation.

BEST COPY AVAILABLE

of employment, as a result of any permanent closure of a plant or facility; or

(3) are long-term unemployed and have limited opportunities for employment or reemployment in the same or a similar occupation in the area in which such individuals reside, including any older individuals who may have substantial barriers to employment by reason of age...

The BLS definition used above (that produces an estimate of 5.1 million dislocated workers) comes quite close to capturing the spirit of the legislative language. It focuses on layoffs, and especially those due to plant closings, and it adds an experience factor (tenure on last job). Relative to the legislative intent, it may be too broad in its inclusion of those who may be cyclically unemployed (slack work) and who presumably would not have great difficulty in keeping or finding a job in a healthy economy. Moreover, many workers who fall within the BLS definition experience only short periods of unemployment that are covered by unemployment insurance (see Table 11). On the other hand, the BLS definition may be too narrow in failing to include some of the long-term jobless who originally became unemployed for reasons other than those specified in the BLS definition and in limiting the universe to those with at least three years of experience on their last job. However, any measure is going to be somewhat arbitrary, and for present purposes, we adopt the BLS definition as a reasonable one.

The next question is how should we interpret this number? Is 5.1 million a little or a lot? How many of the unemployed are displaced workers? And how many are receiving some assistance in finding new jobs?

First of all, the BLS estimate represents a little over a million workers a year. It is tempting to compare this number to current unemployment levels (around 8.4 million) but the latter represents the number unemployed at the time of the monthly survey and not the much larger number of people who experience some unemployment over the course of a year. Aggregating the annual work experience data for the period 1979-1983, there were 113,552,000 people recorded as experiencing some unemployment over this five-year period. So as a first approximation 4.5 percent (5,091/113,552) of the unemployed could be thought of as displaced workers. But this estimate (4.5 percent) is too low because the BLS count of displaced workers is a retrospective unduplicated count over five years while the annual work experience data is a retrospective count over just one year and the same individual can get counted in two or more successive years (if they were unemployed in both December and January, for example). Adjusting for this double counting, we estimate that a total of 56,776,000 different people experienced unemployment over the five-year period and displaced workers were 9 percent of the total.[7]

---

7 The adjustment is relatively crude. The work experience data indicate a mean duration of unemployment of around 6 months when the open- ended class of 52 weeks or over is assumed to have a midpoint of 78 weeks. With a mean duration of 6 months, and assuming spells are distributed evenly over the year, half of those unemployed during a year are also unemployed the following year so we reduce the work experience counts by one-half. This still does not correct for the possibility that the same person might experience unemployment in more than two years or in two or more non-contiguous years.

In short, almost one out of every 10 workers who suffers some unemployment is an experienced worker that has lost his or her job as the result of a plant shutdown or move, slack work, or abolishment of a shift or position. A little more than half of these workers are re-employed within 26 weeks (Table 11).

This still leaves 2.3 million or 460,000 a year who suffer more than 26 weeks of unemployment. Since the number of people projected to be served by JTPA Title III in PY (program year) 1984 is close to 100,000, one could conclude that JTPA is only meeting about one-fifth of the need.

Table 12 shows the characteristics of displaced workers using the main BLS definition. The great majority are prime-age white males with at least a high school education. The table also shows the characteristics of JTPA Title III enrollees. Relative to the eligible pool, JTPA is serving a somewhat higher proportion of women, minorities, younger workers, and the better-educated.

We turn now to what is know about the ability of such programs to assist displaced workers.

TABLE 12

Distributions of Title III JTPA Enrollees and Eligible Population of Displaced Workers by Selected Characteristics

Selected Characteristics	JTPA Title III Enrollees (July 1984-March 1985)	Eligible Displaced Workers
Estimated total	74,800	5,091,000 [1]
Percent	100	100
Sex		
Male	62	65
Female	38	35
Minority Status		
White (excluding Hispanics)	70	81
Black (excluding Hispanics)	22	12
Hispanics	6	6
Other	2	2
Age		
Younger than 22	6	2 [2]
22-44	73	62
45 and older	21	36
Education		
Less than high school	20	25
High school graduate or more	80	75

SOURCE: Department of Labor, August 1985.

1. As defined by the Bureau of Labor Statistics, U.S. DOL, this estimate represents persons with tenure of three or more years who lost or left a job between January 1979 and January 1984 due to plant closings or moves, slack work, or the abolishment of their positions or shifts.

2. The BLS data for this category represent 20 and 21 year olds only.

VII. Programs for Dislocated Workers

In the past, the United States has experimented with a number of programs designed to assist workers dislocated by trade or other kinds of economic change. This section briefly reviews the history of these efforts, focusing on what has been learned that might be useful in thinking about future efforts. The programs covered include the Manpower Development and Training Act (MDTA), the Trade Adjustment Assistance Act (TAA), the Comprehensive Employment and Training Act (CETA), several pilot projects funded by the Department of Labor, and Title III of the Job Training Partnership Act (JTPA).

A Note on Methodology

Many assessments of the impact of labor market programs on individual or aggregate performance are based on some combination of faith and descriptive data on what happens to enrollees after they leave the program. However, some studies have attempted to compare the pre- and post-program experiences of enrollees after controlling for other (nonprogram) influences on the observed differences—either through the use of a control or comparison group and/or through the use of statistical models which attempt to adjust for the effects of these other influences.[8] In this review, we will focus on these latter studies that look at the net impact of government assistance, holding other factors constant, and our review of each program gives the greatest weight to studies that are well-designed to get at such net impacts.

The Manpower Development and Training Act

Initially enacted in 1962 in response to concerns about automation and structural unemployment among experienced adult workers, MDTA operated for a dozen years before being replaced by CETA in late 1973. A total of $4.4 billion was spent over this period—all of it by the federal government—and about 2 million people were enrolled. However, the ink was hardly dry on the original Act before it was revised, first to give greater priority to youth (in 1963) and then to minorities and the disadvantaged (in 1965 and 1966). By 1966, two-thirds of all training positions were earmarked for the disadvantaged. Therefore, in our review of program impacts, we gave greatest weight to the early evaluations and to the results for white males or other relatively advantaged workers. Participants were enrolled mainly in institutional training programs in the early years with a small minority placed in on-the-job training. Data on the nature, quality, and duration of the training is skimpy. However, the evaluation literature on MDTA is voluminous (especially in comparison to

---

8 The most credible results are achieved by randomly assigning potential participants to either a control (nontreatment) or experimental (treatment) group but this has rarely been feasible. The DOL demonstration program in Buffalo (discussed below) used a lottery system in recruiting workers for the programs and thus comes closest to providing us with a controlled experiment.

more recent programs). The findings of greatest interest for present purposes can be summarized as follows:[9]

1. The net impact of training on annual earnings is generally positive.

2. The impact is greater for on-the-job than for institutional training.

3. A typical earnings increase would be about $400 per year (or about $1,300 in 1984 dollars).

4. These earnings gains are achieved mainly because training enables participants to compete effectively for existing jobs and facilitates reentry into the labor market or stability of employment and not because it enables them to achieve upward mobility or command higher hourly wage rates. One possibility is that participants obtain jobs at the expense of nonparticipants, with total employment remaining unchanged.

5. The favorable impact on earnings tends to erode over time. That is, after a period of years program participants may be no better off than nonparticipants.

6. For the program to be judged cost-effective—that is, for participant benefits to exceed program costs, earnings gains would have to be maintained for 5 to 10 years. Follow-up studies indicate some erosion of earnings gains in the first few post-program years but have not covered a sufficient number of years to provide good evidence on longer-term effects.

Trade Adjustment Assistance (TAA)

Trade Adjustment Assistance was established as part of the Trade Expansion Act of 1962, expanded and liberalized under the Trade Act of 1974, and then cut way back again by the Omnibus Budget and Reconciliation Act of 1981. (Between the time of its liberalization in the mid 1970s until its peak in 1981, $3.9 billion was paid out to 1.3 million recipients.) At current writing, it is once more being revised and expanded by a Congress deeply concerned about very large trade deficits. Special assistance for trade-dislocated workers is usually justified on the grounds that the average citizen benefits from free trade and should compensate those workers who lose their jobs as the result of foreign competition.

Under the 1974 program, workers in industries where the Labor Department certified that foreign imports "contributed importantly" to unemployment were eligible for both generous cash allowances (70 percent of the weekly wage for up to 78 weeks) and services (job search, counselling, training, relocation subsidies). However, there has been very limited use of the service components of the program.[10]

---

9 These findings are distilled from Perry (1975).

10 See CBO (1982) and Hobbie (1980).

TAA is now widely conceded to have been an ineffective program. For example, one quite well-controlled study of 963 TAA recipients who received a first payment in 1976 found that 72 percent returned to work for their previous employer, strongly suggesting that the program was mainly serving temporarily laid-off workers.[11] This study also found that the availability of adjustment assistance discouraged workers from seeking jobs and lengthened the duration of their unemployment somewhat (by 1 or 2 weeks for each 10 percentage point increase in the fraction of wages replaced by TAA.)[12] Finally, there was no evidence that either the cash or services provided helped workers to find higher wage jobs. Of course, it is possible to view TAA simply as compensation for a permanent loss of earnings. The present value of the real, after-tax earnings loss for those permanently laid off was estimated to be about $10,000 to $15,000 ($18,000 to $27,000 in 1984 dollars), with TAA benefits replacing about 30 to 40 percent of these losses. To make these workers "whole" would have required still more generous benefits.

It should be emphasized that while permanent layoff creates larger earnings losses than temporary layoff, many so-called trade-dislocated workers are, as noted above, only temporarily unemployed. Conversely, many permanent layoffs result from factors that have nothing to do with trade. This raises the issue of whether eligibility for assistance should be linked to the cause of the layoff or to its nature and likely effects. In recent years there has been a proliferation of special employee protection programs—each with its own structure of benefits and eligibility rules. What they all have in common is the desire to compensate workers who lose their jobs due to some kind of economic or political change.

Comprehensive Employment and Training Act (CETA)

Enacted in 1973, CETA was the nation's major employment and training program for almost a decade. However, it never served many dislocated workers. This appears to have been the result both of CETA's eligibility rules and disinterest on the part of dislocated workers in what CETA had to offer.[13] Those who did participate fared worse in the labor market than their counterparts who did not participate; however, this may say more about the characteristics of those who chose to enter the program than about the effectiveness of CETA services since no studies are available that include a well-designed control group.[14]

Demonstration Programs

In an attempt to learn more about the best way to assist dislocated workers, the Department of Labor funded seven pilot projects in the 1980s. Results on their impacts are now available from 2 of these pilot programs: (1) the Downriver Community Conference Economic Readjustment Activity Program in

---

11 See Corson et al. (1976). GAO found that 67 percent of TAA eligibles returned to pre-layoff employment.

12 Neumann (1978) found effects that were about twice as large but there are reasons to believe they are biased upward.

13 Barth and Reisner for NCEP, 1981.

14 Ibid.

Detroit, Michigan, and (2) the Buffalo Worker Re-Employment Demonstration Program.

Downriver.[15] The Downriver program began operation in July 1980 with the objective of assisting permanently laid off automotive workers from three plants in the Detroit metropolitan area find new jobs. Participants were required to complete an initial two-week screening and assessment of their skills and aptitudes and to participate in a job search workshop before being assigned to classroom or on-the-job training. No cash assistance was provided although unemployment insurance exhaustees were eligible to receive the minimum wage for each hour they were in class.

About half of the eligible workers from three manufacturing plants that had shut down in the area enrolled in the program, although they typically waited about four months after layoff to do so. Of these enrollees, close to 60 percent received some retraining either in class-size programs developed specifically by the project (25 percent), in local educational institutions (28 percent) or in on-the-job training programs (7 percent). The average duration of training was 6 to 8 months and emphasis was placed on technically-oriented courses that met employers' needs in growing fields. All enrollees received training in how to search for a job and could use the placement and relocation services offered by the program. Only 8 percent of participants relocated and one-fifth of these later returned to the Downriver area.

A carefully controlled evaluation of the impact of the program on subsequent employment found the following:

1. For workers from the two plants served during the initial phase of the program (1980-1981), the proportion reemployed, the fraction of time they were employed, and their average weekly earnings during the two years after layoff were significantly higher among program participants than among comparable nonparticipants from other area plants that had closed.

2. For workers from the third plant served during a later phase of the program (1982-83), there were no positive effects associated with the program. The authors attribute this to the fact that the area unemployment rate increased almost 50 percent between phase 1 and phase 2, making it much more difficult for any program to be effective. In addition, those from the third plant appear to have been poorly motivated and may have differed in other ways from those with whom they were compared in measuring program impacts.

3. In both phases, the program significantly increased participants' access to training, especially in vocational/technical areas.

4. Those participants who received training did not fare significantly better than those who just received job search and placement assistance. However, the authors of the study caution that this statistical result may reflect the quality of the training, small sample sizes, the short duration of the observation period, or the fact that those who participated in training were more disadvantaged than those who did not.

---

15 This section draws heavily on Smith, et al. (1984) and Kulik (1984).

Buffalo. This program recruited laid off workers from a number of different employers but the majority were from the steel and automobile industries. Of those recruited, about one-fifth chose to participate.

As in the Downriver program, participants were put through an initial assessment and job search workshop and offered a full range of training, relocation, and placement services. Slightly less than half of the participants received training, either in the classroom, or on the job.

Relative to eligible workers who did not participate, participants were more likely to be employed and had higher weekly earnings during the six months following the demonstration, with nonwhite and younger workers benefiting the most.

Classroom training and job search assistance produced similar benefits but since job search assistance is less costly to provide it was more cost effective. (The authors of the evaluation study caution that classroom training benefits might be greater over the longer run.) On-the-job training did not have a significant impact on employment.

Job Training Partnership Act

Title III of JTPA provides federal funds to the states on a matching basis for programs serving displaced workers. As noted earlier, displaced workers are defined as those who have lost, or are about to lose, their jobs due to a layoff or plant shutdown, who are eligible for, or have exhausted, unemployment benefits, and who are unlikely to return to their old occupation or industry. Also included are the long-term unemployed and older workers with special needs.[16] The legislation requires that 70 percent of the funds be spent on training and related employment services. Within this requirement, states have considerable discretion to allocate the funds to local areas or projects of their own choosing. Many are doing so on a request-for-proposal basis; others have distributed the funds by formula or by some mixture of project proposal and formula.[17] While some states have become involved in actually operating programs or in defining eligibility for project funds, many of these decisions have been effectively transferred to local project operators.

Many states have been slow to spend their Title III allocation ($223 million in FY 1984), mainly because of the start-up problems associated with a new

---

16 Up to one quarter of the funds can be reserved for use by the Secretary of Labor on a discretionary basis. The normal matching requirement is 50 percent with a smaller matching requirement permitted states with above average unemployment. Unemployment insurance benefits paid by the state to enrollees can be used for up to one half of the matching requirement. In-kind services also count. The federal funds are allocated by a formula: one-third on the basis of the relative number of unemployed individuals, one-third on the basis of the relative excess number of unemployed individuals (above 4.5 percent) and one-third on the relative number of individuals unemployed for 15 weeks or more.

17 Cook and Turnage (1985)

TABLE 13

Program Statistics on Title III Enrollees and Terminees,
July 1984-March 1985

Number of enrollees	74,800
Characteristics of Enrollees (percent)	
Male	62
Minority	30
Age 22-44	73
Economically Disadvantaged	51
Receiving Public Assistance	14
High School Graduate	80
Initial Program Assignment of Enrollees (percent)	
Classroom Training	23
On-the-Job Training	19
Job Search Assistance	38
Other Services	19
Number of Terminees	50,900
Median Length of Stay of Terminees (in weeks)	15.7
Proportion of Terminees who Entered Employment	70
Average Hourly Wages at Termination	$6.15

SOURCE: U.S. Department of Labor, Office of Strategic Planning and Policy Development, Division of Performance Management and Evaluation, Summary of JTLS Data for JTPA Title IIA and III Enrollments and Terminations During January - March 1985, August 1985.

program and the reliance on a time-consuming project proposal system for allocating funds.[18] In addition, there have been some complaints about the unwillingness of laid-off workers to undergo training, perhaps because they believe that they will eventually be recalled to their old job.[19]

The only data available so far on the impact of Title III are in the form of descriptive statistics collected by DOL as part of the Job Training Longitudinal Survey (JTLS). These data cover enrollment levels, enrollee characteristics, initial program assignment, length of stay, terminations, post-program employment and wage levels for the first three-quarters of program year 1984 (July 1984 through March 1985).[20] These data are summarized in table 13.

The number of enrollees for the first three quarters of the year, 74,800, translates into an annual inflow of roughly 100,000 workers. As noted earlier, enrollees are predominantly adult, male, white high school graduates. The most common service provided was job search assistance followed by classroom training, and on-the-job training or other services in that order.

During July 1984-March 1985, 51,000 people left the program after an average stay of about 4 months. Of these, 70 percent found jobs that paid an average of $6.15 an hour.[21]

It is, of course, impossible to know whether these outcomes are related in any way to participation in the program.[22] The answer to this question will have to await further analysis of the experiences of Title III participants relative to a similar group of nonparticipants.

Summary: What Have We Learned?

The lessons from past programs can be summed up as follows:

1. Targeting is an issue if resources are not to be diverted to serving the temporarily unemployed as in the TAA program.

---

18 Because of the slow spending rate, the administration proposed a rescission of $120 million of the $223 million appropriated for FY 1985 and a budget of $100 million for FY 1986.

19 Cook and Turnage (1985).

20 Because the basic sampling unit for the JTLS is a JTPA service delivery area and most dislocated worker programs are being run on a project rather than an SDA basis, a special sample design had to be developed for Title III participants (beginning with FY 1984) and the validity of the data are still open to question.

21 More precisely, 70 percent "entered employment" which includes recalls to old jobs.

22 Note: OTA has conducted a telephone survey of states. The majority of those reporting (19 out of 30) stated that re-employment wages were lower, on average, than those paid on workers' former jobs, with 6 states reporting losses of as much as 20 percent.

2. The provision of cash assistance is unlikely to promote adjustment and may increase unemployment. However, even relatively generous programs fail to compensate permanently laid off workers for the earnings losses they experience.

3. Adjustment is facilitated by programs that offer a full range of services such as classroom and on-the-job training, job search assistance, placement, and relocation. It is most likely to be effective when jobs are available in the local labor market and workers are well-screened and well-motivated for training.

4. There is, as yet, no hard evidence that the benefits of training for program participants exceed the costs of that training, but this may simply reflect the lack of long-term follow-up in most evaluations.

5. Job search assistance and counselling provide substantially more benefits per dollar of program expenditure than does training.

Unresolved Issues

In thinking about the future of JTPA Title III, TAA, or other programs for displaced workers, a number of basic issues remain to be resolved. These include:

1. The magnitude of the problem. There is currently no agreement on the number of displaced workers and the appropriate level of effort required to meet their needs. In particular, distinguishing between cyclical and structural causes of unemployment or between industries suffering permanent long-term declines vs. those temporarily impacted by recession or an overvalued dollar is quite difficult. Related issues are the extent to which permanent layoffs can be identified beforehand and the extent to which advance warning of major layoffs or plant shutdowns could facilitate the timely provision of adjustment assistance and reemployment.

2. Whether it is feasible or desirable to target on trade-dislocated workers as distinct from those permanently laid off for other reasons such as technological change, domestic competition, or changing demand for the product.

3. The relationship of displaced worker programs to other labor market programs, including the employment service, unemployment insurance, and training programs for the disadvantaged.

4. The possible need for more emphasis on remedial basic education and relocation to solve structural unemployment problems combined with some evidence that most workers are reluctant to engage in either.

5. The extent to which training and job search assistance do anything other than reshuffle unemployed workers in loose labor markets.

6. The extent to which any services-oriented adjustment program can eliminate the earnings losses typically suffered by displaced workers and the merits of providing some form of cash compensation for these losses. While such compensation is expensive and, if improperly designed, can create disincentives to work, it may be cheaper than protectionism.

7. The locus of responsibility for these problems: federal, state, local, or private.

VIII. Conclusions and Policy Recommendations

This study of the labor market implications of the growing internationalization of the American economy has provided evidence that international trade developments indeed have had an adverse impact on employment in many industries in recent years. However, these impacts seem to have been caused much more by short run changes in the exchange rate arising from the particular mix of monetary and fiscal policy that has been pursued over the past few years than by a fundamental deterioration of U. S. competitiveness in world markets. Moreover, trade has had much more of an effect on where new jobs have been created—in service and other non-trade-sensitive industries and not in manufacturing and agriculture—than on the total number of jobs created. Nevertheless, U. S. labor markets do face adjustments arising from the increasing internationalization of the economy and some workers will lose their jobs and have little prospect of getting the same jobs back in the same industries.

The problems of those facing temporary unemployment due to the overvalued dollar and large trade deficit are best addressed by getting our macroeconomic house in order. Continued progress in reducing the federal budget deficit together with a somewhat more stimulative monetary policy can bring down interest rates and the exchange rate and achieve more balanced growth. As long as oil prices remain weak, the risk of inflation associated with a falling dollar and expanding economy remains relatively small.

The problems of those facing longer run structural adjustments are not likely to be solved by macroeconomic policy alone, although it is true that it will be easier for those losing jobs in shrinking industries to find new jobs if the overall labor market is strong rather than weak. Our experience with past programs to aid dislocated workers suggests that carefully targeted adjustment assistance programs can improve the re-employment prospects of dislocated workers. Job search and placement assistance appear to be more cost-effective than training.

Finally, it is important to recognize the futility of pursuing protectionist policies. Import restraints may protect some jobs in some industries in the short run but they cost jobs in other industries at the same time and they prevent the kinds of long term adjustments that are necessary for healthy long run growth. Well-designed adjustment assistance programs stand a better chance of helping those hurt by trade while at the same time facilitating appropriate adjustments to changing economic conditions.

BIBLIOGRAPHY

Robert E. Baldwin, "Determinants of the Commodity Structure of U.S. Trade," American Economic Review, 1, 1971.

Robert E. Baldwin, John H. Mutti, and J. David Richardson, "Welfare Effects on the United States of a Significant Multilateral Tariff Reduction," Journal of International Economics, 10, 1980, pp. 405-423.

Michael C. Barth and Fritzie Reisner, The Role of CETA in Providing Services to Non-Disadvantaged, Displaced Workers, Report by ICF Incorporated submitted to The National Commission for Employment Policy, October 1981.

Marc Bendick, Jr., "The Role of Retraining in Reemploying Workers Displaced by Imports," testimony before the Subcommittee on International Trade of the Committee on Finance, U.S. Senate, Washington, D.C., September 17, 1985.

Congressional Budget Office, Dislocated Workers: Issues and Federal Options (Washington, D.C.: Government Printing Office, July 1982).

_____. The Economic and Budget Outlook (Washington, D.C.: Government Printing Office, August 1985), pp. 46-51.

Robert F. Cook and Wayne M. Turnage, "The New Federal-State Program to Train Dislocated Workers," Monthly Labor Review, July 1985.

Walter Corson, Rebecca Maynard, and Jack Wichita, "Process and Implementation Issues in the Design and Conduct of Programs to Aid the Reemployment of Dislocated Workers" (Princeton, New Jersey: Mathematica Policy Research, Inc., October 30, 1984).

Walter Corson, Walter Nicholson, and Felicity Skidmore, Experiences of Unemployment Insurance Recipients During the First Year After Exhausting Benefits, (Washington, D.C.: Government Printing Office, 1976).

Robert L. Crosslin, James S. Hanna and David W. Stevens, Identification of Dislocated Workers Utilizing Unemployment Insurance Administrative Data: Results of a Five State Analysis, (Washington, DC: National Commission for Employment Policy, April 1984), Research Report Series # RR-84-03.

Paul O. Flaim and Ellen Sehgal, "Displaced Workers of 1979-83: How Well Have They Fared?" Monthly Labor Review, June 1985.

General Accounting Office, Restricting Trade Act Benefits to Import-Affected Workers Who Cannot Find a Job Can Save Millions (Washington, D.C.: Government Printing Office, January 15, 1980).

Richard A. Hobbie, Trade Adjustment Assistance for Workers: Program Growth and Possible Changes (Washington, D.C.: Congressional Research Service, Issue Brief, IB 80082, August 1980).

Jane Kulik, The Downriver Community Conference Economic Readjustment Program: Overview & Summary (Cambridge, Massachusetts: Abt Associates Inc., September 30, 1984).

Robert Z. Lawrence, "Is Trade De-Industrializing America?" Brookings Paper on Economic Activity 1, 1983, pp. 129-171.

Wassily Leontief, "Domestic Production and Foreign Trade: The American Capital Position Re-examined," in Richard Caves and Harry Johnson, eds., Readings in International Economics (Homewood: Irwin, 1968).

Mathematica Policy Research, Inc. Final Report Survey of Trade Adjustment Recipients (Princeton, New Jersey: Mathematica Policy Research, Inc., December 1979).

National Commission for Employment Policy, Seventh Annual Report: The Federal Interest in Employment and Training, Report No. 13 (Washington, D.C.: National Commission for Employment Policy, 1981).

George R. Neumann, "The Direct Labor Market Effects of the Trade Adjustment Assistance Program: The Evidence from the TAA Survey," in U.S. Department of Labor, Bureau of International Labor Affairs, The Impact of International Trade and Investment on Employment (Washington, D.C.: Government Printing Office, 1978, pp. 107-27).

Charles R. Perry, et al., eds., The Impact of Government Manpower Programs: In General, and on Minorities and Women, No. 4 (Philadelphia, Pennsylvania: Industrial Research Unit, The Wharton School, University of Pennsylvania, 1975).

D. Alton Smith, Jane Kulik, Ernst W. Stromsdorfer, "The Economic Impact of the Downriver Community Conference Economic Readjustment Activity Program: Choosing Between Retraining and Job Search Placement Strategies," in Kevin Hollenbeck, Frank C. Pratzner and Howard Rosen, Displaced Workers: Implications for Educational and Training Institutions (Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984, Chapter 16).

U.S. Department of Labor, Bureau of Labor Statistics, Displaced Workers, 1979-83 (Washington, D.C.: Government Printing Office, Bulletin 2240, July 1985).

_____, "Summary of JTLS Data for JTPA Title IIA and III: Enrollments and Terminations During January-March 1985," U.S. Department of Labor, Office of Strategic Planning and Policy Development, Division of Performance Management and Evaluation, August 1985.

Kan Young, Ann Lawson, and Jennifer Duncan, Trade Ripples Across U.S. Industries: Effects of International Trade on Industry Output and Employment. Office of Business Analysis, Office of the Under Secretary for Economic Affairs, U.S. Department of Commerce. Working Paper prepared for a workshop sponsored by the Under Secretary for Economic Affairs on structural change in the U.S. economy, on January 14, 1986.